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'PROGRESS' IN RETROSPECT

EVERY AGE, EVERY CIVILIZATION, has a spirit of its own. It is this that determines the habitual outlook, the typical way of looking at things, the values, norms and interdictions—in short, the essentials of the culture. It is quite certain, moreover, that most individuals will conform to the prevailing tendencies of the civilization into which they have been born, and this applies also no doubt to the majority of those who consider themselves to be non-conformists. On the other hand, it must also be possible to transcend cultural boundaries: there can really be no such thing as a rigid cultural determinism. But yet this crossing of boundaries turns out to be a rather rare occurrence; it happens much less frequently than we are led to suppose. We must not let ourselves be fooled. It is true, for example, that in modern times there has been an unprecedented interest in the study of history; and yet one finds that it is almost invariably a case of history truncated by the mental horizon of our age and colored by the humanistic sentiments of our civilization. The Zeitgeist is indeed a force to be reckoned with, and it is never easy to swim against the stream.

Yet this is precisely what must be done if we are to gain an unbiased perspective on the modern world. To put it rather bluntly, we need to break out of the intellectual smugness and provincialism of the typically modern man, the individual who has become thoroughly persuaded that our civilization represents the apex of a presumed 'human evolution', and that mankind had been groping in darkness until Newton and his scientific successors arrived upon the scene to bring light into the world. Now this is not to deny that

bygone ages have known their share of ignorance and other ills, and that in certain respects the human condition may have been improved. Our point, rather, is that these supposedly positive developments which figure so prominently in the contemporary perception of history represent only a part of the story: the lesser part, in fact. We see the things that we have gained and are blind—almost by definition—to all that has been lost. And what is it that has been lost? Everything, one could say, that transcends the corporeal and psychological planes, the twin realms of a mathematicized objectivity and an illusory subjectivity. In other words, as intellectual heirs to the Cartesian philosophy we have become denizens of an impoverished universe, a world whose stark contours have been traced for us by the renowned French rationalist. At bottom there is physics and there is psychology—answering to the two sides of the great Cartesian divide—and together the two disciplines have in effect swallowed up the entire locus of reality: our reality, that is. Beyond this we see nothing; we cannot—our premises do not permit it.

But what then is out there that could possibly be seen? And by what means? The answer is surprisingly simple: what is to be seen is the God-made world, and this seeing—this prodigy—is to be accomplished through the God-given instruments consisting of the five senses and the mind. In this way we actually come into contact with the real, objective cosmos, which turns out to be a live universe full of color, sound and fragrance, a world in which things speak to us and everything has meaning. But we must learn to listen and to discern. And that is a task which involves the whole man: body, soul, and above all, 'heart'. Everyone has seen a bird or a cloud, but not everyone is wise, not everyone is an artist in the true sense. This is of course what an education worthy of the name should help us to achieve: it should make us wise, it should open the eye of the soul.

One question remains: what is it that Nature has to tell—if only one has 'ears to hear'? Now to begin with it speaks of subtle things, of invisible causes and of cosmic harmonies. There is a science to be learned, a 'natural philosophy' that is not contrived. But that is not all; it is only the merest beginning. For at last—when 'the heart is pure'—we discover that Nature speaks, not of herself, but of her

Maker: 'Heaven and earth are full of Thy glory.' Or in the words of the Apostle, '*the invisible things of Him from the creation of the world have been clearly seen, being understood by the things that are made, even His eternal power and Godhead.*'

But as we are well aware, the very recollection of this exalted knowledge began to wane long ago and by the time of the Renaissance had grown exceedingly dim, except in the case of a few outstanding souls. When it comes to Galileo and Descartes, moreover, it would appear that the light had gone out entirely: their philosophy of Nature leaves little room for doubt on that score. And from here on one encounters a prevailing intellectual milieu that is truly benighted, whatever the history books may say. To be sure, there have been some notable voices crying in the wilderness, and yet it is plain to see that 'Bacon and Newton, sheath'd in dismal steel' have carried the day, and that their 'Reasonings like vast Serpents' have infolded 'the Schools and Universities of Europe,' as Blake laments to his everlasting glory. It was the victory of 'single vision': a kind of knowing which paradoxically hinges upon a scission, a profound alienation between the knower and the known. Now this is the decisive event that has paved the way to modern culture. From that point onwards we find ourselves (intellectually) in a contrived cosmos, a world cut down to size by the profane intelligence—a man-made universe designed to be comprehensible to physicists, and for its very lack of objective meaning, to psychologists as well.

Or this is where we would find ourselves, better said, if the great modern movement had fully succeeded in converting us to its preconceived notions. But that is not really possible; on closer examination we are bound to discover that there is in fact no one on earth who fully believes—with all his heart—what science has to say: such a Weltanschauung can speak only to a part of us, to a single faculty as it were, and so it is in principle unacceptable to the total man. Still, there is no denying that collectively we have become converts to a high degree. And if the vision does not fit the whole man, he can learn to live piecemeal, by compartments so to speak. Having become alienated from Nature—the object of knowledge—he becomes in the end estranged from himself.

We are beginning to see that the cosmological train of thought

which started idyllically enough with the garden meditations of Descartes has had cultural reverberations. Roszak is unquestionably right when he insists that 'cosmology implicates values', and that 'there are never two cultures; only one—though that one culture may be schizoid.'[1] He may also be right when he speaks of the outward consequences of this cultural neurosis in the following terms:

> We can now recognize that the fate of the soul is the fate of the social order; that if the spirit within us withers, so too will all the world we build about us. Literally so. What, after all, is the ecological crisis that now captures so much belated attention but the inevitable extroversion of a blighted psyche? Like inside, like outside. In the eleventh hour, the very physical environment suddenly looms up before us as the outward mirror of our inner condition, for many the first discernible symptom of advanced disease within.[2]

FOLLOWING UPON these summary observations, it may be well to reflect on the first major achievement of modern science, which is no doubt the Copernican astronomy. One generally takes it for granted that the displacement of the Ptolemaic by the Copernican world-view amounts to a victory of truth over error, the triumph of science over superstition. There are even those who perceive the Copernican position as a kind of holy doctrine having Giordano Bruno as its martyr and Galileo as its saintly confessor. But strangely enough it is forgotten that twentieth-century physics is in fact neutral on the entire issue. There was first of all the question whether the sun moves while the Earth remains fixed, or whether it is really the Earth that moves, and not the sun. Now what modern physics insists upon—ever since Einstein recognized the full implication of the Michelson-Morley experiment—is that the concepts of rest and motion are purely relative: it all depends on what we take to be our frame of reference. Thus, given two bodies in space, it makes no

1. *Where the Wasteland Ends* (Garden City, NY: Doubleday, 1973), p200.
2. Ibid., pxvii.

sense whatever to ask which of the two is moving and which is at rest. So much for the first point of contention. The second issue, moreover, related to the position of the two orbs, each side claiming that the body which they took to be at rest occupies the center of space. And here again contemporary physics sees a pseudo-problem arising from fallacious assumptions. The question is in fact senseless on two counts: first, because (as we have seen) one cannot say that a body is at rest in an absolute sense; and secondly, because there is actually no such thing as a center of space. Thus, whether one conceives of cosmic space as unbounded (like the Euclidean plane) or as bounded (like the surface of a sphere), there exists in either case no special point that is marked out from the rest, and so also no point which could be taken as the center of space. But in the absence of a center the Copernican debate loses its meaning; from this perspective the entire controversy appears indeed as the classic example of 'much ado about nothing'.

Yet this way of looking at the matter—which equalizes the two contesting sides—turns out to be no less deceptive than the popular view which bestows the palm of victory on the Copernicans. If the popular verdict is based on little more than prejudice and propaganda, the scientific appraisal for its part rests on the no less gratuitous assumption that cosmology is to be formulated in purely quantitative and 'operationally definable' terms. One tacitly assumes, in other words, that quantity is the only thing that has objective reality, and that the *modus operandi* of empirical science constitute the only valid means for the acquisition of knowledge. Now historically this is just the position to which Western civilization has been brought through a series of intellectual upheavals and reductions in which the Copernican revolution has played a major role. In fact, the new outlook stems directly from the later Copernicans, individuals like Galileo, whose thought was already modern in that regard. One should also remember that these (and not Copernicus) are the men who ran afoul of the ecclesiastical authorities and precipitated the famous debates. It was in the year 1530, let us recall, that Copernicus communicated his ideas to Pope Clement VII and was encouraged by the Pontiff to publish his inquiries; and it was a century later (in the year 1632) that Galileo was summoned

before the Inquisition. The point is that there was more to the celebrated controversy than first meets the eye; and while overtly the debate raged over such seemingly harmless issues as whether it is the Earth or the sun that moves, one can see in retrospect that what was actually at stake was nothing less than an entire Weltanschauung.

We tend to forget that the Ptolemaic world-view was incomparably more than simply an astronomical theory in the contemporary sense; we forget that it was a *bona fide* cosmology as distinguished from a mere cosmography of the solar system. Now to appreciate the point of this difference, it must be recalled that the ancient Weltanschauung conceives of the cosmos as an hierarchic order consisting of many 'planes', an order in which the corporeal world—made up of physical bodies, or of 'matter' in the sense of modern physics—occupies precisely the bottom rank. This implies, in particular, that whatever can be investigated by the methods of physics—everything that shows up on its instruments—belongs *ipso facto* to the lowest fringe of the created world. Newton *was* right: we *are* only gathering pebbles by the seashore; for indeed, the physical sciences, by their very nature, are geared to the corporeal order of existence. Now basically this is just the world that is perceptible to our external senses; only we must remember that even this lowest tier of the cosmic hierarchy is incomparably richer than the so-called physical universe—the ideal or imagined cosmos of contemporary science—because, as we have had ample opportunity to see, the corporeal world comprises a good deal more than simply mathematical attributes. Thus, if we wanted to locate the universe of modern physics on the ancient maps, we would have to say that it constitutes an abstract and exceedingly partial view of the outermost fringe, the 'shell' of the cosmos. A *bona fide* cosmology, on the other hand, in the traditional sense, is a doctrine that bears reference—not just to a single plane—but to the cosmos in its entirety.

The question arises, of course, how the Ptolemaic theory, which after all does speak of the sun and its planets, could 'bear reference to the cosmos in its entirety,' seeing that the corporeal order as such constitutes no more than the smallest part of that total cosmos. And the answer is simple enough, at least in principle: the things of Nature point beyond themselves; though they be corporeal, they

speak of incorporeal realms—they are symbols. In fact, there is an analogic correspondence between the different planes: 'as above, so below' says the Hermetic axiom. We must not forget that despite its hierarchic structure the cosmos constitutes an organic unity, much like the organic unity of mind, soul and body which we can glimpse within ourselves. Does not the face mirror the emotions or thoughts, and even the very spirit of the man? We have become oblivious of the fact that the cosmos, too, is an 'animal', as the ancient philosophers had observed.

This, then—the miracle of cosmic symbolism—is what stands behind the Ptolemaic world-view and elevates it from a somewhat crude cosmography to a full-fledged cosmology. There was a time, moreover, when men could read the symbol, when they sensed that the solid Earth as such represents the corporeal realm, which stands at the very bottom of the cosmic scale; and that beyond this Earth there are spheres upon spheres, each larger and higher than the one before, until one arrives at last at the Empyrean, the ultimate limit or bound of the created world. They sensed too that there is an axis extending from Heaven to Earth, by which all these spheres are held together as it were, and around which they revolve; and they realized intuitively that the relation of containment is expressive of pre-eminence: it is the higher, the more excellent, that contains the lower, even as the cause contains the effect or the whole contains the part.

Let us add that in attempting to appraise these ancient beliefs we must not be put off by the fact that their erstwhile proponents—men who supposedly had some intuitive apprehension of higher realms—were evidently ignorant of things that are nowadays known to every schoolboy. We need not be unduly astonished, for example, that Ptolemy took our planet to be fixed in space because 'if there were motion, it would be proportional to the great mass of the Earth and would leave behind animals and objects thrown into the air.'[3] Childish, yes; but we should remember that the Book of Nature can be read in various ways and on different levels, and that

3. Quoted by E.A. Burtt, *The Metaphysical Foundations of Modern Physical Science* (New York: Macmillan, 1951), p35.

no one knows it all. To be sure, 'There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy.'

Getting back to the Copernican debate, it has now become apparent that the change from a geocentric to a heliocentric astronomy is not after all such a small or harmless step as one might have imagined. The fact is that for all but a discerning few it has undermined and discredited a cosmic symbolism which had nurtured mankind throughout the ages. Gone was the visible exemplification of higher realms and the vivid sense of verticality which spoke of transcendence and of the spiritual quest. Gone was the world that had inspired Dante to compose his masterpiece. With the demise of the Ptolemaic world-view the universe was in effect reduced to a single horizontal cross-section—the lowest, no less. It has become for us this narrow world, which remains so for all the myriad galaxies with which we are currently being regaled. Nature has become 'a dull affair', as Whitehead says, 'merely the hurrying of material, endlessly, meaninglessly.'

One might object to this assessment of what was actually at stake in the Copernican issue on the grounds that a heliocentric astronomy too admits of a symbolic interpretation, since it identifies the sun—a natural symbol of the Logos—as the center of the cosmos. But yet the fact remains that its rediscovery by Copernicus has not been propitious to a spiritual vision of the world; 'rather was it comparable to the dangerous popularization of an esoteric truth', as Titus Burckhardt observes.[4] One must remember that our normal experience of the cosmos is obviously geocentric, a fact which in itself implies that the Ptolemaic symbolism is apt to be far more accessible. Moreover, the Copernican victory came at a time when the religious and metaphysical traditions of Christianity had already fallen into a state of partial decay, so that there was no longer any viable framework within which the symbolic content of heliocentrism could have been brought to light. As Hossein Nasr has pointed out, 'the Copernican revolution brought about all the spiritual and religious upheavals that its opponents had forecasted

4. 'Cosmology and Modern Science', in *The Sword of Gnosis* (Baltimore: Penguin, 1974), p127.

would happen precisely because it came at a time when philosophical doubt reigned everywhere. . . .'[5] It was a time when European man was no longer especially attuned to the reading of transcendental symbols and had already to a large extent lost contact with the higher dimensions of existence. And this is what lends a certain air of unreality to the Copernican dispute, and what from the start assured the eventual triumph of the new orientation. By now the wisdom of bygone ages—like every truth that is no longer understood—had become a superstition, to be cast aside and replaced by new insights, new discoveries.

WITH THE DISAPPEARANCE of the Ptolemaic world-view Western man lost his sense of verticality, his sense of transcendence. Or rather these finer perceptions had now become confined to the purely religious sphere, which thus became isolated and estranged from the rest of the culture. So far as cosmology—Weltanschauung in the literal sense—was concerned, European civilization became de-Christianized.

At the same time a radical change in man's perception of himself was taking place. We need to recall in this connection that according to ancient belief there is a symbolic correspondence between the cosmos in its entirety and man, the theomorphic creature who recapitulates the macrocosm within himself. Thus man is indeed a 'microcosm', a universe in miniature; and that is the reason why, symbolically speaking, man is situated at the very center of the cosmos. In him all radii converge; or better said, from him they radiate outwards in every direction to the extremities of cosmic space—a mystical fact which we find graphically depicted in many an ancient diagram. No doubt the reason for this centrality is that man, having been made 'in the image of God', carries within himself the center from which all things have sprung. And that too is why he can understand the world, and why in fact the cosmos is intelligible to the human intellect. He is able to know the universe because in a way it pre-exists in him.

5. *Man and Nature* (London: Allen & Unwin, 1976), p66.

But of course all this means absolutely nothing from the modern point of view. To be sure, once the cosmos has been reduced to the corporeal plane, and that in turn has been cut down to its purely quantitative parameters, there is little left of the aforementioned analogy. Admittedly our physical anatomy does *not* resemble the solar system or a spiral nebula. It is first and foremost in the qualitative aspects of creation, as revealed to us through the God-given instruments of perception, that cosmic symbolism comes into play. We need not be surprised, therefore, that a science which peers upon Nature through lifeless instruments fashioned by technology should have little to say on that score.

In any case, along with the Ptolemaic theory the ancient anthropology fell likewise into oblivion. Man ceased in effect to be a microcosm, a theomorphic being standing at the center of the universe, and became instead a purely contingent creature, to be accounted for by some sequence of terrestrial accidents. Like the cosmos he was flattened out, shorn of the higher dimensions of his being. Only in his case it happens that 'mind' refuses to be altogether exorcised. It remains behind as an incomprehensible concomitant of brain-function, a kind of ghost in the machine, a thing that causes untold embarrassment to the philosophers. The fact is that man does not fit into the confines of the physical universe. There is another side to his nature—be it ever so subjective!—which cannot be described or accounted for in physical terms. And so, in keeping with the new outlook, man finds himself a stranger in a bleak and inhospitable universe; he has become a precarious anomaly—one could almost say, a freak. There is something pathetic in the spectacle of this 'precocious simian'; and behind all the noise and bluster one senses an incredible loneliness and a pervading *Angst*. Our harmony and kinship with Nature has been compromised, the inner bond broken; our entire culture has become dissonant. Moreover, despite our boast of knowledge, Nature has become unintelligible to us, a closed book; and even the act of sense perception—the very act upon which all our knowledge is supposed to be based—has become incomprehensible.

What then are we to say concerning the stupendous knowledge of science? It is evidently a knowledge that has been filtered through

external instruments and that partakes of the artificiality of these man-made devices. Strictly speaking, what we know is not Nature but certain methodically monitored effects of Nature upon that mysterious entity termed 'the scientific observer'. It is thus a postivistic knowledge geared to the prediction and control of phenomena, and ultimately—as we know—to the exploitation of natural resources and the practice of terrestrial rapine. All euphemisms aside, science—like most else that modern man busies himself with—is well on the way to becoming simply an instance of 'technique' in the sense of the sociologist Jacques Ellul.

Meanwhile all the ideal aspects of human culture, including all values and norms, have become relegated to the subjective sphere, and truth itself has become in effect subsumed under the category of utility. Transcendence and symbolism out of the way, there remains only the useful and the useless, the pleasurable and the disagreeable. There are no more absolutes and no more certainties; only a positivistic knowledge and feelings, a veritable glut of feelings. All that pertains to the higher side of life—to art, to morality or to religion—is now held to be subjective, relative, contingent—in a word, 'psychological'. One is no longer capable of understanding that values and norms could have a basis in truth. How could this be in a world of 'hurrying material'? And so man has become the great sophist: he has set himself up as 'the measure of all things'. Having but recently learned to walk on his hind legs (as he staunchly believes), he now fancies himself a god! 'Once Heaven was closed,' writes Schuon, 'and man was in effect installed in God's place, the objective measurements of things were, virtually or actually, lost. They were replaced by subjective measurements, purely human and conjectural pseudo-values.'[6]

Thus, too, all the elements of culture, having once been subjectivized, have become fair game to the agents of change. Nothing is sacrosanct any more, and at last everyone is at liberty to do as he will. Or so it may seem; for in reality the manipulation of culture has become a serious enterprise, a business to be attended to by governments and other interest groups.

6. *Light on the Ancient Worlds* (London: Perennial Books, 1965), p30.

We find thus that cosmology does indeed 'implicate values'; one could even say that eventually it turns into politics. So too a pseudo-cosmology necessarily implicates false values, and a politics destructive of good. It is by no means a harmless thing to be cut off from the higher spheres or from the mandates of God. Our civilization has forgotten what man is and what human life is for; as Nasr notes, 'there has never been as little knowledge of man, of the *anthropos*.'[7] To which one might add that apparently no previous culture has managed to violate so many natural and God-given norms to any comparable extent.

SOME REFLECTIONS on the subject of art may not be inappropriate at this point. The first thing to be noted is that the very conception of art has changed: the word has actually acquired a new meaning. Thus art has become 'fine art', something to be enjoyed in leisure moments and generally by the well-to-do. It has become a luxury, almost a kind of toy. In ancient times, on the other hand, 'art' meant simply the skill or wisdom for making things, and the things made by art were then called 'artefacts'. Strictly speaking everything that answered a legitimate need and that had to be produced by human industry was an artefact. Thus an agricultural implement or a sword was an artefact, a piece of furniture or a house was an artefact, and so too was a cathedral or an icon or an ode. The artefact, moreover, was there for the whole man, the trichotomous being made up of body, soul, and spirit; and so even the humblest tool or utensil had to possess more than simply 'utility', in the contemporary sense. That 'more', of course, derives from symbolism, from the language of forms. It is the reason why a water-pot can be a thing of immense beauty and meaning. Not that this beauty had to be somehow superimposed upon the object, like an ornament. It was there as a natural concomitant of utility, of the 'correctness', one could say, of the work. And that is the reason why in ancient times there was an intimate link between art and science, and why Jean Mignot (the

7. 'Contemporary Man, between the Rim and the Axis', *Studies in Comparative Religion*, 7 (1973), p116.

builder of the cathedral at Milan) could say that 'art without science is nothing' (*ars sine scientia nihil*). In a word, both beauty and utility were conceived to spring from truth.

It was understood, moreover, that authentic art can never be profane. For let us remember that according to Christian teaching the eternal Word or Wisdom of God is indeed the supreme Artist: '*All things were made by Him, and without Him was not anything made.*' Now it follows from the profound sense of this text that whatever is truly made, or made rightly, is made by Him. And this implies that the human artist—every authentic artist—must participate to some degree in the eternal Wisdom. 'So, too, the soul can perform no living works,' writes St Bonaventure, 'unless it receive from the sun, that is, from Christ, the aid of His gratuitous light.'[8] Man, therefore, the human artist, is but an agent; to achieve perfection in his art he must make himself an instrument in the hands of God. And so the production of the artefact is to be ascribed to the divine Artificer in proportion as it is beneficent and well made; for indeed '*every good gift and every perfect gift is from above, and cometh down from the Father of lights*' (James 1:17).

To some extent this constitutes a universal doctrine that has guided and enlightened the arts of mankind right up to the advent of the modern age. Thus even in the so-called primitive societies all art, all 'making', was a matter of 'doing as the gods did in the beginning.' And that 'beginning', moreover, is to be understood in a mythical, that is to say, in a metaphysical sense. Basically it is the ever-present 'now', that elusive point of contact between time and eternity which is also the center of the universe, the 'pivot around which the primordial wheel revolves.' As Mircea Eliade has amply demonstrated, the traditional cultures have been cognizant of that universal center and have sought by ritual or other symbolic means to effect a return to that point of origin, that 'beginning'. That is where man was able to renew himself; from thence he derived strength and wisdom. And from thence too, needless to say, he derived his artistic inspiration. Thus, strange as it may sound, the traditional artist works not so much in time as in eternity. His art

8. *De Reductione Artium ad Theologian*, 21.

partakes somehow of the instantaneous 'now'; and this explains its freshness, the conspicuous unity and animation of its productions. No matter how long it may take to fashion the external artefact, the work has been consummated internally in a trice, at a single stroke.

The Scholastics were no doubt heirs to this immemorial conception of art. It is evidently what St Thomas has in mind when he defines art as 'the imitation of Nature in her manner of operation'[9]; for we must understand that here the term 'Nature' is employed not in the current sense—not in the sense of *natura naturata*, a nature that has been made—but in the sense of *natura naturans*, the creative agent which is none other than God. The human artist thus imitates the divine Artificer; for in imitation of the Holy Trinity he works 'through a word conceived in his intellect' (*per verbum in intellectu conceptum*),[10] which is to say, through a word or 'concept' which mirrors the eternal Word. Man too 'begets a word' in his intellect; and this constitutes the *actus Primus* of artistic creation.

It follows from these considerations that there is a profound spiritual significance both in the enjoyment and in the practice of authentic art. On the one hand, a *bona fide* artefact will possess a certain charisma, a beauty and significance which no profane or merely human art could effect—not to speak of mechanized production. Such an artefact will exert an invisible influence upon the user; it will benefit the patron in unsuspected ways. But what is still more important, the exercise of his art will bring not only material remuneration but also spiritual benefit to the artist. 'Manufacture, the practice of an art,' writes Coomaraswamy, 'is thus not only the production of utilities but in the highest possible sense the education of men.'[11] It is a spiritual way, a means to perfection. And one could even say that the practice of an art should be a normal and integral part of the Christian life: everyone should be an artist of some kind, each in accordance with his vocation. As William Blake has expressed it, 'The Whole Business of Man Is the Arts.... The unproductive Man is not a Christian.'

9. *Summa Theologiae*, I, 117, 1.
10. Ibid., I, 45, 6.
11. *Christian and Oriental Philosophy of Art* (New York: Dover, 1956), p27.

One also knows, however, that as Blake was writing these lines the Industrial Revolution was gathering momentum and the Arts were on their way out. The machine age was upon us, and that kind of manufacture which had been so much more than the mere 'production of utilities' was fast being replaced by the assembly line. We know that efficiency has been increased a hundredfold and that the 'standard of living' has never been so high. And we know too that the promised utopia has not arrived, and that unforeseen difficulties are cropping up at an accelerating pace. What we generally don't know, however, is that our civilization has become culturally impoverished to an alarming degree. We are beginning to become cognizant of the ecological crisis and shudder at the reports of acid rain, but still fail to behold the spiritual wasteland that has been forming around us for centuries. We speak of 'the dignity of labor' and forget that there was a time when manufacture was more than a tedium, a meaningless drudgery which men endure only for the sake of pecuniary reward. We speak of 'the abundant life' and forget that happiness is not simply play, entertainment or 'getting away from it all', but the spontaneous concomitant of a life well lived. We forget that pleasure does not come in pills or via an electronic tube but through what the Scholastics termed 'proper operation', the very thing that authentic art is about. In short, what we have totally forgotten is that 'The Whole Business of Man Is the Arts.'

Besides industry, of course, our culture comprises also 'the fine arts', which are there presumably to supply 'the higher things of life'. Now whatever else might be said in behalf of these productions, it is clear that for the most part they are bereft of any metaphysical content. Our art ceased long ago to be a 'rhetoric' and became an 'aesthetic', as Coomaraswamy has pointed out; which is to say that it is no longer intended to enlighten but only to please. It is not the function of our fine arts 'to make the primordial truth intelligible, to make the unheard audible, to enunciate the primordial word, to represent the archetype,' which from a traditional point of view is indeed 'the task of art, or it is not art,' as Walter Andrae observes.[12] And however sublime this 'fine art' may be, it does not in fact bear

12. Quoted by A.K. Coomaraswamy, op. cit., p55.

reference to 'the invisible things of Him' because the artist who made it was simply a man—a genius, perhaps, but a man nonetheless. Unlike ancient art it does not derive 'from above', nor does it refer to spiritual realities, or to God 'whom we never mention in polite society.' As a matter of fact, in keeping with the overall subjectivist trend of modern culture, art has become more and more a matter of 'self-expression', right up to the point where the contingent, the trivial and the base have all but monopolized the scene. A stage has been reached where much of art is plainly subversive—one needs but to recall those bizarre paintings of patently Freudian inspiration which could very well have originated within the walls of a lunatic asylum! The history of modern art teaches us that the merely human, cut off from spiritual tradition and the touch of transcendence, is unstable; it degenerates before long into the infrahuman and the absurd.

THERE IS AN INTIMATE CONNECTION between the machine metaphor as a cosmological conception and the creation of a technological society. Let us not forget that a machine has no other *raison d'être* than to be used. When Nature, therefore, is viewed as being nothing more than a machine, it will as a matter of course come to be regarded simply as a potential object of exploitation, a thing to be used in all possible ways for the profit of men. The two attitudes, moreover, go hand in hand; for as Roszak points out, 'only those who experience the world as dead, stupid, or alien and therefore without a claim to reverence, could ever turn upon their environment ... with the cool and meticulously calculated rapacity of industrial civilization.'[13] It is therefore not surprising that no sooner had the postulate of cosmic mechanism gained official recognition than men began on an unprecedented scale to build their own machines with which to harness the forces of Nature; in the wake of the Enlightenment came the Industrial Revolution.

But the story does not end there; for it was inevitable within the perspective of the new cosmology that man, too, should come to be

13. *Where the Wasteland Ends* (cited in n 199 above), pp 154–55.

viewed as a kind of machine. What else could he be in a Newtonian universe? And if man is a machine, society too is a machine and human behavior is deterministic: Newton, Lamettrie, Hobbes, and Pavlov clearly lie on a single trajectory. And these recognitions—or better said, these new premises—open up incalculable possibilities! Whether we realize it or not, the cold and rigorous dialectic of science in its concrete actuality leads step by step to the formation of a technological society in the full frightening sense of that term.

Let us consider the matter a little more carefully. To understand the scientific process we need to recall an essential idea which goes back not so much to Newton as to Descartes, and is especially associated with the name of Francis Bacon (the first of the two 'archvillains' in Blake's vision of Victorious Science). Now Bacon's contribution resides in his perception of a universal and all-encompassing method for the systematic acquisition of knowledge. In the first place, this process is envisaged as collective and cumulative; it is an enterprise that keeps on gathering momentum. Thus 'the business' of knowing should not be left in the hands of the individual but is to be carried out by teams of experts, as we would say; and significantly enough (this is its second notable characteristic), it is to be done 'as if by machinery'. Here it is again: the all-conquering omnivorous machine metaphor! But this time in an entirely new key: as a methodological principle. With telling effect Bacon goes on to observe how very small would be the accomplishments of 'mechanical men' if they worked only with their bare hands, unaided by tools and instruments contrived through human ingenuity. In like manner very little can be accomplished when men seek to acquire knowledge through 'the naked forces of understanding.' In the mental domain, too, we need a tool, an instrument of thought; and that is just what his '*novum organum*'—Bacon's famed method of science—is intended to supply. 'A new machine for the mind', he calls it. And like every machine it is there to be used for profit; truth and utility, he assures us, 'are here one and the same thing.'

One can say in retrospect that whereas Bacon's specific recipes for scientific discovery have proved to be relatively useless (as many have pointed out), his dream of a systematic and collective science in which 'human knowledge and human power meet in one' has no

doubt been realized beyond his wildest expectations. What has triumphed is not so much any specific 'machine for the mind' but the idea of method or technique as something formal and impersonal that interposes itself between the knower and the known. And whereas on the one hand this artificial intermediary has isolated the knower—impeded his direct access to reality—it has also made possible the development of a formal and depersonalized knowledge, based upon the systematic labors of countless investigators. First came the development of classical physics and what might be termed 'hard' technology. Later the modern biological sciences began to emerge, and later still the so-called behavioral and social sciences. Meanwhile the process of scientization began to extend itself beyond the boundaries of every formally recognized science and proceeded to exert a dominant influence in other domains. 'Scientific knowledge becomes, within the artificial environment, the orthodox mode of knowing,' writes Roszak; 'all else defers to it. Soon enough the style of mind that began with the natural scientist is taken up by imitators throughout the culture.'[14] And as the matter stands, this 'style of mind' is to be encountered everywhere; it has entered into cloisters and convents. It has become a mark of enlightenment, the respected thing; 'all else defers to it.' As Bacon had shrewdly seen, there are in principle no limits to the scientization of culture: given free reign, the process is bound to insinuate itself into virtually every sphere of human thought and every activity.

It is obvious to all that our outer life-styles are being drastically altered as a direct consequence of the scientific advance. What we generally fail to realize, on the other hand, is that the impact of this same development on our inner lives—yes, on the condition of our soul—is no less pronounced. To begin with, the mechanization of our work-environment, the phenomenon of urban sprawl, the rising congestion and perpetual noise, the proliferation of concrete, steel and plastic, the loss of contact with Nature and with natural things, the invasion of our homes by the mass media—all this in itself is bound to have its effect on our mental and emotional condition. Add to this the uprooting of people from their ancestral environment, an

14. Ibid., p31.

unprecedented mobility which shuffles populations like a deck of cards! Add also the other innumerable mechanisms within the technological society which tend to break down every natural division and all cultural ties. Let us add up (if we are able!) all the factors which homogenize and level out. For it must not be forgotten that people too have to be standardized, like interchangeable parts of a machine, so that the wheels of the mechanized civilization may run smoothly and efficiently.

It is to be noted, moreover, that in the course of the present century this leveling, which began with the Industrial Revolution, has entered upon a new phase due to the rise of the behavioral and social sciences. Now from a purely academic point of view it may well appear that these disciplines are of little consequence; for apart from the factual information which they have accumulated (much of it in the form of statistical data) it would seem that one can hardly speak of 'science' at all. The trappings of science (fancy terms and reams of computer print-out) are there no doubt, but very little of its substance—so long, at least, as one insists that the objective verification of hypotheses, without obfuscation and fudging, constitutes a *sine qua non* of the scientific process. And this deficiency is occasionally admitted even by members of the profession. There is the case of Stanislav Andreski, for example, who has offered[15] insightful observations on such subjects as 'The Smoke Screen of Jargon', 'Quantification as Camouflage', 'Ideology Underneath Terminology', and most important of all, 'Techno-Totemism and Creeping Crypto-Totalitarianism'. There it is! This is just the point: if we take a closer look at these seeming pseudo-sciences we find that they too fit perfectly into the integral framework of the technological society. Here too one encounters a kind of 'knowledge' which begets power. As we have already seen in the case of Freudian and Jungian psychology, a pseudo-science may not be without its 'utility', its technical efficacy. And if Voltaire could say that even lying becomes 'virtuous' when it is practiced for the right end, then why (in a pragmatic civilization) should not these human techniques be deemed a science and their dogmas 'truth'?

15. *Social Sciences as Sorcery* (London: Deutsch, 1972).

Be that as it may, the fact remains that our century has witnessed a dramatic increase in the utilization on the part of governments, industries and other powerful interest groups of methods based upon the so-called behavioral and social sciences. A well-known story about Pavlov may be recalled in this connection: it is reported that shortly after the Bolshevik Revolution the famed scientist was virtually imprisoned in the Kremlin and ordered to write a book describing in detail how behavioral methods based upon his theory of conditioned reflexes may be applied to the indoctrination and control of human beings. Whether it be true that Lenin, upon reading the book, exclaimed to Pavlov 'you have saved the Revolution!' —one does know with certainty that Pavlovian methods have been used extensively in the Soviet Union, and that similar techniques have also been developed and applied in the Western democracies.[16]

However, this does not preclude the fact that the vast majority of people, be it in Russia or in the United States, are almost entirely unaware of this process and could not even imagine the extent to which it has already influenced their own beliefs and psychic make-up. As Jacques Ellul has pointed out with reference to propaganda as a specific area of human technique:

> Propaganda must become as natural as air or food. It must proceed by psychological inhibition and the least possible shock. The individual is then able to declare in all honesty that no such thing as propaganda exists. In fact, however, he has been so absorbed by it that he is literally no longer able to see the truth. The natures of man and propaganda have become so inextricably mixed that everything depends not on choice or on free will, but on reflex and myth. The prolonged and hypnotic repetition of the same complex of ideas, the same images, and the same rumors condition man for the assimilation of his nature to propaganda.[17]

Much the same could be affirmed, moreover, with regard to many other areas of human technique which are not simply 'propaganda'

16. See William Sargant, *Battle for the Mind* (Westwood, CT: Greenwood, 1957).
17. *The Technological Society* (New York: Alfred Knopf, 1965), p366.

in the strict sense. Thus it is only to be expected that in our kind of civilization almost every organized 'encounter'—from kindergarten to post-graduate seminars—will entail an element of concealed indoctrination. As Ellul has shown, virtually all education—on both sides of the Iron Curtain—involves mechanisms of conditioning and control designed to fit the individual into the projects of the society.[18] Even our leisure is 'literally stuffed with technical mechanisms of compensation and integration' which, though different from those of the work environment, are 'as invasive and exacting, and leave man no more free than labor itself.'[19] Within the last decade even religious and priestly retreats have become fair game to the scientific methods of 'sensitivity training'! It is the greatest mistake to think that the technological society can be 'culturally neutral', or that the celebrated 'pluralism' about which one hears so much in Western countries can be anything more than a passing phase or an outright fake. 'Cosmology implicates values'—to say it once more—and without any doubt the manipulation of man, the most vital 'resource' of all, constitutes the ultimate technology.

WHILE IT IS SOCIOLOGICALLY CERTAIN that science begets technology, it also cannot be denied that in its purest form science is simply the pursuit of knowledge for its own sake. Like philosophy, it begins in wonder, or in a certain curiosity about Nature; and especially when it comes to the great scientists—an Einstein or a Schrödinger—one finds that the driving force behind their scientific inquiries is indeed worlds removed from any thought of application. One needs but to recall with how much diffidence and anguish Einstein offered his fateful formula to the service of the Free World when the hard exigencies of the time seemed to demand this step. It is one of the great ironies of fate that the most terrible instruments of destruction have been pioneered by men who above all others loved peace, and that the most powerful means of enslavement owe their existence to some of the greatest champions of human liberty.

18. Ibid., p347.
19. Ibid., p401.

But let us pause to reflect a little on the idea of 'knowledge for its own sake'; our sentiments notwithstanding, might there not be an intrinsic connection between this noble quest and such bitter fruit? Preposterous, the humanist will say; and admittedly it has become an almost universally accepted premise that the unbridled pursuit of knowledge constitutes one of the most beneficial and praiseworthy of human occupations. No one seems to question that 'research' of just about any description is a wonderful thing which in some mysterious way is bound to enhance 'the dignity of man' or 'the quality of life'. Not infrequently one finds individuals of even the most prosaic type waxing eloquent in praise of those who are said to have 'pushed back the frontiers of the unknown.' Our libraries are already filled to bursting with the products of this great passion, and yet the cry is always for more. And even when it is recognized that the fruits of this knowledge—the consequences of its applications—have proved to be equivocal or to threaten the very survival of man—even then it is thought that science as such is in no wise at fault. The blame must always be placed at the door of the avaricious entrepreneur or the unscrupulous politician, or it must lie with the short-sighted members of Congress who are held responsible for the under-funding of research. For indeed all ills resulting from 'research and development' are thought to be curable, homeopathic style, with yet another dose of R & D; no one seems prepared to weigh the possibility that the malaise may actually be due, not to an insufficiency, but to an excess of this factor.

Come what may, pure science—science with a capital S—can do no wrong. It is astounding that in an age of unprecedented skepticism, when immemorial beliefs are being tossed aside like worn toys or blithely held up to public ridicule, one should encounter this virtually limitless faith in the unfailing beneficence of scientific research.

What lies behind this passion for more and more science, more and more technology—this mania, one is tempted to say, which has taken hold of our civilization? Is it indoctrination? Yes, no doubt; but then, who first indoctrinated the educators and the technocrats? It is not really quite so simple. Nor can one expect to understand the phenomenon in depth from the typical perspectives of humanist

thought. Has not humanism been closely allied with the scientific mentality from the start? Is not the one as well as the other a characteristic manifestation of the contemporary Zeitgeist? Do they not share a common anti-traditional thrust? Were not both equally implicated, for example, in the French Revolution, when 'the Goddess of Reason' was installed on the high altar of Notre Dame? And have not the two—despite the interlude of Romanticism—stood together on almost every issue? It would appear, then, that there can be no searching critique of science which is not also at the same time a critique of humanism. To go beyond superficial appearances and banalities we must be prepared to step out of the charmed circle of contemporary presuppositions and avail ourselves of the only viable alternative to modern thought: and that is *traditional* thought.

What, then, does traditional teaching have to say on the subject of science? We propose to look at the matter from a specifically Christian point of vantage; and even at the risk of speaking what can only be 'foolishness to the Greeks', we shall attempt to place ourselves in an authentically Biblical perspective. This means in particular that we need to reflect anew on the familiar account in Genesis concerning the 'forbidden fruit' and the fall of Adam, his expulsion from 'the garden of paradise'. Now in the first place we must go beyond the customary explanation of this event, which is based upon an essentially moral as opposed to a metaphysical point of view. It is all well and good to attribute Adam's fall to 'the sin of disobedience', and this no doubt expresses a profound and vital truth. But we must also realize that this line of interpretation, valid though it be, cannot possibly cover the entire ground. For one thing it leaves open the question as to why Adam had been commanded to abstain from this particular fruit in preference to all others, and why the tree which brought forth this forbidden harvest is referred to as 'the tree of the knowledge of good and evil'. It is reasonable to suppose, moreover, that 'the apple of knowledge' was indeed fatal not simply because it was forbidden, but that it was forbidden precisely because it would prove fatal to man. Furthermore, we must not think that the 'good' which was to be known through the eating of this fruit is that true or absolute good which religion always associates with the knowledge of God; and neither must we assume that

the 'evil' which comes to be revealed through the same act is something objectively real, something which has been created by God. For indeed the opening chapter of Genesis has already informed us many times over that God had surveyed the entire creation and found it to be 'good'. The knowledge, therefore, that is symbolized by the forbidden fruit is a partial and fragmentary knowledge, a knowledge which fails to grasp the absolute dependence of all things upon their Creator. It is a reduced knowledge which perceives the world not as a theophany but as a sequence of contingencies: not *sub specie aeternitatis* but under the aspect of temporality. And it is only in this fragmented world wherein all things are in a state of perpetual flux that evil and death enter upon the scene. They enter thus, on the one hand, as the inescapable concomitant of a fragmentary knowledge, a knowledge of things as divorced from God; and at the same time they enter as the dire consequences of 'disobedience'—the misuse of man's God-given freedom—and so as 'the wages of sin'.

Thus Adam fell. 'The link with the divine Source was broken and became invisible,' writes Schuon; 'the world became suddenly external to Adam, things became opaque and heavy, they became like unintelligible and hostile fragments.'[20] In other words, the world as we know it came into existence: history began. But that is not the whole story. The Biblical narrative has in fact an extreme relevance to what is happening here and now; for as Schuon points out, 'this drama is always repeating itself anew, in collective history as in the life of individuals.'[21] The fall of Adam, then, is not only a primordial act which antedates history as such, but it is also something which comes to pass again and again in the course of human events. It is re-enacted on a smaller or larger scale wherever men opt for what is contingent and ephemeral in place of the eternal truth.

It appears that a 'fall' of major proportions has in fact taken place roughly between the fourteenth and eighteenth centuries. Even the most casual reading of European history reveals the contours of a gigantic transformation: the old order has crumbled and a new

20. *Light on the Ancient Worlds*, p44.
21. Ibid.

world has come to birth. To be sure, this is the cultural metamorphosis which we normally behold under the colors of Evolution and Progress; what we do not perceive, on the other hand, is that we have forfeited our sense of transcendence in the bargain. In other words, we have become sophisticated, skeptical and profane. Much as we might wish to be enlightened, the wisdom of the ages has become for us a superstition, a mere vestige of a supposedly primitive past; or at best it is seen as literature and poetry in the exclusively horizontal sense which we currently attach to these terms. Like it or not, we find ourselves in a desacralized and flattened-out cosmos, a meaningless universe which caters mainly to our animal needs and to our scientific curiosity.

Admittedly there are compensations. Energy has been diverted, so to speak, from higher to lower planes, and this accounts undoubtedly for the incredible vigor with which the modernization of our world has been pressed forward and everything on earth is being visibly transformed. At last man is free to devote himself entirely to the mundane and to the ephemeral portion of himself. And this he does, not only with Herculean effort, but with a kind of religiosity. It is one of the salient features of our time that ephemeral goals and secular pursuits—down to the most trivial and inglorious—have become invested with a sacredness, one could almost say, which in bygone ages had been reserved for the worship of God. But why? What is it all about? 'Equipped as he is by his very nature for worship,' writes Martin Lings,

> man cannot not worship; and if his outlook is cut off from the spiritual plane, he will find a 'god' to worship on some lower level, thus endowing something relative with what belongs only to the Absolute. Hence the existence today of so many 'words to conjure with' like 'freedom', 'equality', 'literacy", 'science', 'civilization', words at the utterance of which multitudes of souls fall prostrate in sub-mental adoration.[22]

Everything depends on how we perceive the world, on the quality, one might say, of our knowledge. Is our vision of the universe

22. *Ancient Beliefs and Modern Superstitions* (London: Perennial, 1965), p45.

centripetal? Is it oriented towards the spiritual center? Is it informed by a sense of verticality, by an intuition of higher spheres? Or is it, on the contrary, horizontal and centrifugal, a knowledge that faces away from the origin, away from the Source? Now that is the kind of knowing which perpetuates the Fall. Always mingled with delusion, it is a profane wisdom that scatters and leads astray. Moreover, it is something to which we have no right by virtue of what we are; like unassimilable food, its very truth becomes eventually a poison to us. Such a knowledge never enlightens us but only blinds our soul; it shuts the gates of Heaven and opens instead the way to the riches of this earth, along with the untold miseries thereof. The terrible fact is that a Promethean science, a science that would make man the measure and master of all things ('ye shall be as gods'), becomes in the end a curse ('cursed is the ground for thy sake, and in sorrow shalt thou eat of it').